OneWaterSF | 2018

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

March 2018

Contents

Calaveras Reservoir, Alameda Watershed

Purple Lupines, Crystal Springs Reservoir

Elevating OneWaterSF

Through OneWaterSF, the San Francisco Public Utilities Commission (SFPUC) has cultivated a shift in thinking about water and energy resource management. OneWaterSF has allowed us to move away from operating within traditional water, wastewater, and energy boundaries to a more holistic resource management approach that enables us to better recognize, value, and utilize our resources.

This shift is the result of several years of realizing benefits associated with projects and programs that converge multiple resources. These include projects such as the constructed wetland and rainwater harvesting systems at the SFPUC Headquarters building, the Non-potable Water Program, and our resource recovery and solar energy programs. The success of these and other projects and programs is attributed to collaboration and partnerships, the use of innovative technologies, and the desire to apply the right resources to the right use. Together, these actions help create an efficient water and energy future.

Our successes led us to formalizing OneWaterSF with the publication of the OneWaterSF Vision and Guiding Principles in 2016. This work formed the basis from which we would advance this new approach to managing our water and energy resources.

> **OneWaterSF Vision**
>
> **With our OneWaterSF approach, San Francisco will optimize the use of our finite water and energy resources to balance community and ecosystem needs, creating a more resilient and reliable future.**

In 2017, we tested various projects and programs, or Initiatives, through a OneWaterSF lens to begin developing a framework and help plan for subsequent years of implementation. As we begin 2018, our goal is to continue building on our successes and expanding the OneWaterSF Vision by focusing our 2018 Initiatives on three key areas:

- Expanding the OneWaterSF Vision within our organization and the community
- Promoting the use of technology and changing business practices
- Matching the right resources to the right use

To us OneWaterSF no longer represents a new way of doing business, it's how we do business - through collaboration and innovation, through the use of technology and partnerships, and by creating opportunities to better utilize our finite resources. We believe that this way of doing business empowers us to provide greater water and energy resource resiliency and reliability, and contribute to the livability and sustainability of our communities and the environment.

Downtown San Francisco skyline

OneWaterSF Approach

Traditionally, resource planning has been done in silos with water managers responsible for securing potable water and wastewater managers responsible for removing "used" water; the water-energy nexus is not considered. This approach fails to recognize the synergies and resource potential across water, wastewater, and energy boundaries.

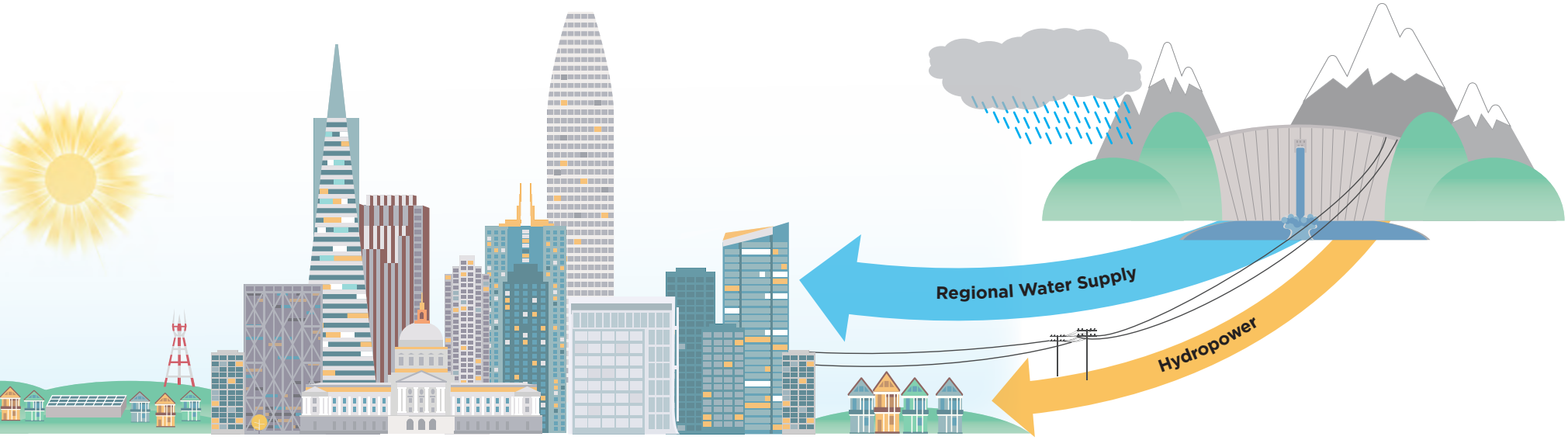
OneWaterSF has allowed us to think differently about resource management. Through our collaboration across traditional boundaries, we are now better able to utilize technology and innovation to optimize finite resources and make our water and energy systems more resilient and sustainable.

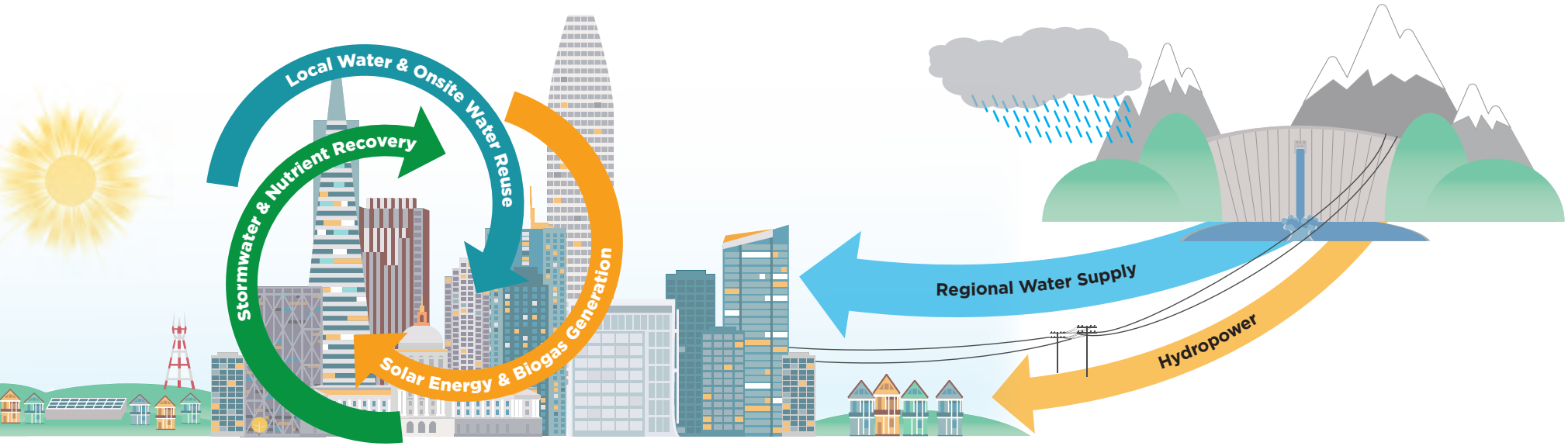
Traditional Resource Management

Traditional water and energy resource management takes a linear approach: resources in, waste out.

OneWaterSF

With OneWaterSF, the SFPUC has made a shift in how we recognize the value of and utilize our finite water and energy resources.


Regional Water Supply
Hydropower


Local Water & Onsite Water Reuse
Stormwater & Nutrient Recovery
Solar Energy & Biogas Generation
Regional Water Supply
Hydropower

Accomplishing OneWaterSF

The OneWaterSF Vision and Guiding Principles serve as the foundation for developing and implementing projects and programs that advance OneWaterSF.

By following these Guiding Principles during the development of OneWaterSF Initiatives, we can break down silos and fuel collaboration both within the SFPUC and externally through partnerships with industry, academia, and the community. This type of thinking and collaboration fosters better recognition of the resources throughout our system, supports optimization of our operations, and inspires us to match finite water and energy resources to the right use.

Highlights of our recent accomplishments are showcased on the following pages. All of our Initiatives embody one or more of the OneWaterSF Guiding Principles. The successful outcomes of these projects and programs help us realize the OneWaterSF Vision and advance opportunities for innovative water and energy management.

College Hill Learning Garden Ribbon Cutting, 2016

OneWaterSF Guiding Principles

1. Match the right resource to the right use.
2. Look holistically at our water, wastewater, and power systems to develop programs, policies, and projects that provide multiple benefits.
3. Plan for variable outcomes and build in flexibility to adapt to future changes.
4. Develop projects and programs that conserve resources and promote ecosystem health, including the health and quality of our watersheds, San Francisco Bay, and the Pacific Ocean.
5. Work across traditional boundaries within our organization to foster collaboration that results in the efficient use of our water, wastewater, energy, and financial resources.
6. Engage our communities to foster awareness and collaboration around OneWaterSF.
7. Pursue partnerships with other agencies, the private sector, and other stakeholders to generate new and creative ideas.
8. Pilot state-of-the-art technologies, and test new approaches to develop new business practices.

Coit Tower, San Francisco

Matching the Right Resource to the Right Use

Taking Advantage of a High-Quality Local Supply

Groundwater for Drinking

Groundwater, also known as well water, is a renewable source of naturally filtered water found deep beneath the ground surface. San Francisco sits on the Westside Groundwater Basin and existing wells from this Basin have been the source for irrigating Golden Gate Park for decades. However, with extensive water quality data from the Basin, we recognize the value of this high-quality water source as a drinking water supply. The San Francisco Groundwater Supply Project helps diversify our water supply portfolio and reduces our dependence on the Regional Water System as the only source of drinking water in San Francisco. Simultaneously, we are developing recycled water for the irrigation of green spaces, ensuring that we are matching each water supply to its appropriate end use. A second groundwater project, the Regional Groundwater Storage and Recovery Project, will enhance reliability during periods of drought by providing additional groundwater to San Francisco and neighboring communities when we need it the most.

Re-thinking Rainfall

Rainwater Harvesting

Rainwater harvesting is the practice of collecting and using rainwater from hard surfaces such as roofs for landscape irrigation. A rainwater harvesting system can range from a small rain barrel to installing a large cistern. Capturing and reusing this relatively clean resource reduces potable water otherwise used for irrigation and helps reduce runoff from entering our combined sewer system during storm events. Identifying appropriate end uses for rainwater helps create a more resilient and sustainable San Francisco. Since 2008, the SFPUC has offered a variety of rebates and incentives to residents to encourage rainwater harvesting. Additionally, the SFPUC has partnered with the City's Community Challenge Grant Program to offer Urban Watershed Stewardship Grants for community-based projects that help manage stormwater using ecologically based strategies, including rainwater harvesting.

Flushing with Recycled Water

Expanding Non-potable Water for Sewer Flushing

Matching the right resource to the right use is a critical Guiding Principal of OneWaterSF. By re-examining all uses of potable water, we can identify uses where potable water can be replaced with another type of water. One use that has been recently identified is sewer flushing. Sewer flushing is a critical activity in maintaining and operating a healthy sewer system. Flushing sewers clears debris and built-up blockages in sewer lines to make sure water keeps flowing to the treatment plant. In 2017, the SFPUC ran a pilot program to use recycled water in lieu of potable water to flush sewer lines. The pilot demonstrated the feasibility of using recycled water to flush sewers and the need for new sewer flushing trucks capable of treating water onsite, rather than redirecting staff in the field to return to the Southeast Treatment Plant for recycled water. A presentation on the pilot's findings and recommendations for next steps were given to the SFPUC General Manager.

Golden Gate Park, San Francisco

Providing Multiple Benefits

Realizing the Water Supply Benefits of Daylighting a Historic Creek

Yosemite Creek Daylighting Project

The Upper Yosemite Creek Daylighting Project restores the natural flow of the ephemeral historic Yosemite Creek in order to better manage flows from 110 acres of McLaren Park. The creek will flow along the northern edge of the park from Yosemite marsh and around the Louis Sutter Playground soccer and softball fields; the creek channel will convey stormwater and alleviate localized flooding issues as well as provide storage and infiltration facilities. This is the first creek daylighting project initiated by the City and will reintroduce habitat and provide opportunities for community learning and beautification. In early 2018, the project team began transitioning from the planning to the design phase, which will include identifying design elements such as material color, construction methods, and construction coordination.

Integrating Green Infrastructure into Design

Stormwater Management Requirements and Design Guidelines

Managing stormwater, which can overwhelm our combined sewer system during large storm events, is critical to protecting the quality of San Francisco Bay. The San Francisco Stormwater Management Requirements and Design Guidelines describe the requirements for stormwater management for development and redevelopment projects subject to the San Francisco Stormwater Management Ordinance and give project proponents the tools to achieve compliance. By encouraging residents to incorporate green infrastructure and design into projects, the SFPUC is not only conserving potable supplies, but protecting the health of San Francisco Bay and the Pacific Ocean by redirecting water from treatment plants and reducing ocean discharge. One example of this is the Lake Merced Well Green Roof, where compliance with the Stormwater Management Ordinance has integrated innovation into the SFPUC's own assets.

Greening Our Roofs

Lake Merced Well Green Roof

The Lake Merced Well Station incorporates a green roof that visually blends the well facility with the landscape to the west and south of the facility. A viewing platform was created on the sidewalk above the well station to increase visual exposure to the site from the public area. The green roof utilizes native plants and provides visual continuity as well as sustainable benefits including reduction of stormwater runoff, increased energy efficiency, reduction in life cycle costs, and potential habitat for birds. By providing these benefits, this project is an ideal example of how we can look holistically at our resources to develop projects that provide multiple benefits.

Fell Street, San Francisco


ofo

Adapting to Future Changes

Expanding Recycled Water Impact: Examining Reuse

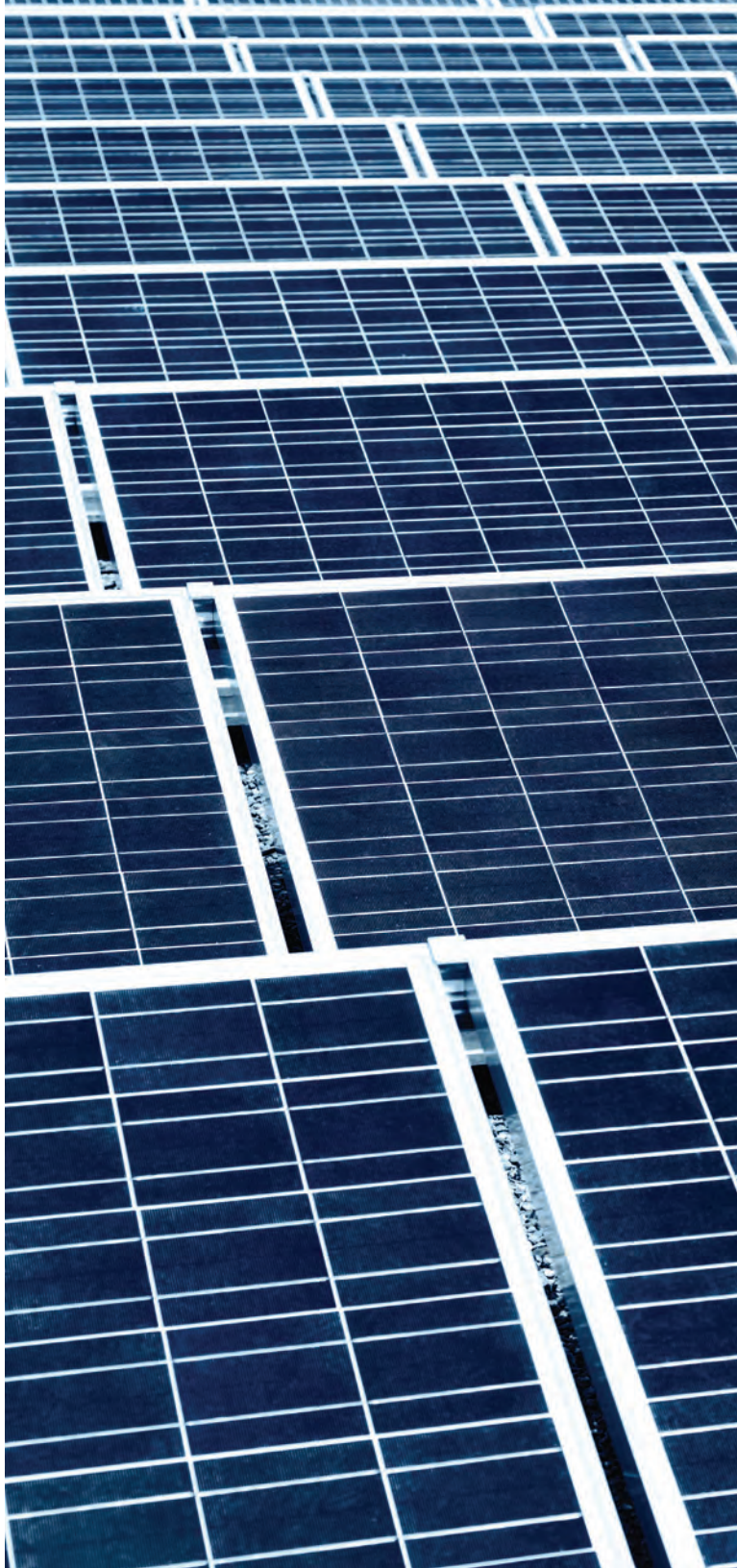
Opportunities for Recycled Water in San Francisco

Water is too precious a resource to use just once. Treated effluent from our water treatment and recovery plants offers a new water source for various purposes. The SFPUC has prepared a White Paper to review the evolution of water reuse in San Francisco and to assess future opportunities. Recycled water can be used for several non-potable uses, such as landscape irrigation of parks, toilet and urinal flushing, decorative fountains, soil compaction, and dust control. Additionally, purified water refers to drinking water produced from recycled water using the most advanced purification treatment processes available. The White Paper lays out the SFPUC's planning strategy for current and near-term recycled water reuse projects in San Francisco and recognizes future challenges and opportunities for expanding non-potable and potable reuse to maximize the use of our water to meet existing and future needs.

Getting Creative with Space

Co-Locating Solar Panels

San Francisco covers area less than 50 square miles, making space a premium. Ensuring that all the available space for the SFPUC is used to its full potential, the SFPUC has embarked on a concerted effort to co-locate solar panels on its water and wastewater properties and facilities. The most visible example of this is the solar array located above the Sunset Reservoir. The Sunset Reservoir Solar Array is San Francisco's largest solar installation. With a generating capacity of up to 5 megawatts, the Sunset Solar Array was the largest urban municipal solar array in California when completed in 2010. In addition to Sunset Reservoir, the Southeast Plant and North Point Wet Weather facilities are both equipped with solar panels, and a solar photovoltaic system has been installed at the Tesla Light Water Treatment Facility; there are also plans to outfit the Oceanside Treatment Plant. Co-locating solar panels on existing infrastructure allows the SFPUC to provide energy benefits while also maximizing the use of space.



Solar Panels

Piloting State of the Art Technologies

Advancing the Science of Purified Water

PureWaterSF

With growing scarcity of water, and wet years interspersed with extended periods of drought, many water providers around California and throughout the United States are looking to purified water as a source of supply. Treated with the appropriate technology, wastewater can be used for non-potable or potable purposes. Regulations for potable reuse are still being developed in California; in the meantime, there continues to be a need for more data on different types of applications. San Francisco is helping to advance the statewide dialogue with PureWaterSF, a 9-month pilot project that takes treated water from the Living Machine and further treats it to meet drinking water standards. The pilot uses ultrafiltration, reverse osmosis, and advanced oxidation with ultraviolet light. After data collection, the water will be returned to the building for toilet flushing. The pilot has three main objectives: 1) see how consistently and reliably the technology works, 2) gather in-depth water quality data and 3) engage our communities on potable reuse. PureWaterSF is supported by grants from the Water Research Foundation and U.S. Bureau of Reclamation.

Being Responsive to an Evolving Business Industry

Changing Business Practices

Over the course of 2017, the SFPUC has developed new business practices to respond to a changing industry. To date, the SFPUC Commission has issued three Green Bonds earmarked for climate change mitigation and adaptation projects. For this work, the SFPUC was awarded a Pioneer Award from Climate Bonds Initiative at their annual conference in March 2017. Additionally, the SFPUC has created several tools and forums to facilitate a seamless transition to new resource utilization and building techniques. As part of the National Green Infrastructure Certification Program, the SFPUC created 12 training modules on how to build, maintain, and inspect green infrastructure.

Conserving Resources and Promoting Ecosystem Health

Producing Fit-for-Purpose Water

Recycled Water Projects

The SFPUC has a number of projects to increase the use of recycled water in San Francisco. The SFPUC has completed construction to deliver recycled water for irrigation at Harding Park and Fleming Golf Courses, as well as the eastside of the Sharp Park Golf Course. Currently, the SFPUC is implementing the Westside Enhanced Water Recycling Project, which includes the construction of a new recycled water treatment facility and almost 8 miles of new recycled water pipelines to irrigate Golden Gate Park, Lincoln Park Golf Course, and the Presidio Golf Course. Each of these projects provides a range of benefits. By reusing effluent that would otherwise be discharged to San Francisco Bay or the Pacific Ocean, we are protecting our receiving waters. By replacing potable water with recycled water for irrigation, we are saving precious drinking water while diversifying our supplies.

Making Conservation a Way of Life

Water Saving Device Distribution

California is making conservation a way of life. As part of our Conservation Program, the SFPUC provides water efficient devices, incentives, and other tools to help homes and businesses save water. Conservation devices offered for free by the SFPUC include kitchen faucet aerators, low-flow showerhead, toilet fill valves, toilet tank dye tablets, and garden-hose shut-off nozzles. During the last year, the SFPUC distributed over 19,000 devices, provided over 6,500 rebates, and conducted over 3,000 water-wise evaluations. These efforts will result in a lifetime water savings over 1 billion gallons of water. By encouraging water conservation, the SFPUC can not only reduce the amount of water used but also promote the health and quality of our local watersheds, San Francisco Bay, and the Pacific Ocean.

Using Technology to Increase Efficiency

Automated Water Meter Program

Millions of gallons of water are lost every day due to leaks; on average, a water agency loses 10% of their supply to leaks. Although water loss in San Francisco is 8%, the SFPUC is committed to managing water loss. One tool to assist with water loss is our Automated Water Meter Program. Under this program, new automated water meters are now in place for more than 98% of San Francisco's 178,000 water accounts. The new technology transmits hourly water consumption data to the SFPUC's billing system by wireless network. As the first major water utility in California to fully deploy automated meter infrastructure, the SFPUC is now able to monitor and alert users of possible leaks or unnecessary water consumption. With this early alert system, ratepayers save money and the SFPUC is able to more closely track water use and ultimately conserve more water.

Baker Beach, San Francisco

Working Across Traditional Boundaries

Building on Success to Strengthen OneWaterSF

OneWaterSF Development

OneWaterSF has precipitated a shift in how we do business at the SFPUC. We have moved away from thinking in silos to taking a more holistic approach to our internal communications and how we approach water and energy resource management. During our first year of implementation of OneWaterSF, we have developed a number of tools and materials to assist in this cultural change and our communication around OneWaterSF. This includes development of a SharePoint site that allows for the transparent access for all SFPUC employees about the ongoing work of OneWaterSF. Presentations and "lunch and learn" opportunities have been provided to staff to give overviews and updates on program initiative progress at the SFPUC headquarters. A digital display is featured in the lobby of the SFPUC headquarters that is used to share OneWaterSF developments with staff and visitors. We have also made an effort to increase external communications through showcasing our OneWaterSF approach in several industry publications. Engagement at all levels is crucial to create a diverse program that can grow and sustain itself so that we can continue to fulfill the OneWaterSF Vision.

Pushing the Innovation Envelope

Non-Potable Water Program

In September 2012, the City and County of San Francisco adopted the Non-potable Water Ordinance. This allowed for the collection, treatment, and use of alternate water sources for non-potable applications in individual buildings and at the district-scale. Onsite non-potable water systems, also referred to as alternate water source systems, provide a myriad of benefits such as reducing potable water use for toilet flushing and irrigation, meeting Stormwater Management Ordinance requirements, and helping San Francisco achieve greater water supply resiliency and reliability. Working closely with the San Francisco Department of Public Health and Department of Building Inspection, the SFPUC has created several resources for both single-building and commercial building owners on what the new ordinance means and how to comply. Replacing the demand for toilet and urinal flushing with non-potable water can offset approximately 25% of the total potable water use in a residential building, and up to 75% in a commercial building. To date, the Non-potable Water Program has over 80 projects in various stages of design, permitting, construction, and operation.

Oceanside Treatment Plant

Pursuing Partnerships

Sending Biosolids to the Marketplace, Not the Landfill

Biosolids Product Development and Market Research

SFPUC biosolids are the nutrient-rich soil amendment that we produce in San Francisco from the wastewater treatment process. Using biosolids is a way for us to recycle plant nutrients and carbon back to soils where they came from and belong. Research and real world agricultural field experience has shown that this soil amendment dramatically improves plant growth and soil health. Using biosolids can also be a tool for combating climate change and making California soils more resilient in the face of drought. In partnership with the University of Washington, the SFPUC developed soil amendments using biosolids from Oceanside Treatment Plant and locally sourced feedstocks. Research trials evaluated the resulting blends on their, odor, appearance, benefit to plant growth, and ability to meet market specifications. As the material from Oceanside Treatment plant achieves Class A status, this research will inform biosolids marketing efforts.

Reducing our Environmental Footprint through Resource Recovery

Assessment of Industry Practices for Biogas Use

Biogas, a natural by-product of the wastewater treatment process, has the potential to provide San Francisco with a natural source of energy that can be developed locally and used to strengthen our commitment to reducing our use of fossil fuels. When organic material is broken down by bacteria, the resulting discharge can be harvested given the proper infrastructure is set up. By combining the efforts of the Power, Business Services, and Wastewater enterprises, the enormous potential of this resource can help San Francisco meet its 0-50-100 ROOTS climate change goals. The SFPUC has also been working with other municipal agencies to join the California Public Utilities Commission in developing more favorable pipeline injection standards for our biogas to open up new markets and carbon credit opportunities. By injecting biogas directly into existing pipelines, San Francisco would create a more resilient energy supply, with minimal disruption.

Engaging Our Communities

Putting Stormwater Runoff Back in the Ground

Downspout Disconnection

Disconnecting downspouts diverts rainwater away from San Francisco's combined sewer system, reducing the volume of stormwater within the combined system during rain events. This resource can be easily reused before entering the sewer system to help with landscape irrigation. Diverting stormwater away from San Francisco's combined sewer system reduces the energy and chemicals needed to treat the water. To help educate the public on the benefits derived from rainwater collection, the SFPUC created manuals and resources on how to redirect rainwater for landscape irrigation or rain barrel collection. This program has allowed the SFPUC to engage with our communities about the benefits of downspout disconnection and beneficial stormwater reuse.

Promoting Showers for Flowers

Laundry-to-Landscape Program

Graywater is water from showers, bathtubs, washing machines, and bathroom sinks that contains some soap but is clean enough for some end uses without treatment, such as irrigation. Graywater from laundry can be used to irrigate yards replacing the use of clean, potable water, which can instead be reserved for consumption. In 2011, the SFPUC launched a new program designed to target residents eager to help conserve potable water by reusing water used for washing clothes to irrigate front and back yards. The Laundry-to-Landscape Program delivers graywater harvesting kits to San Francisco residents, so they have the tools and resources necessary to reuse the water. Along with the kits, residents are given training on how to properly install and maintain these onsite systems. For customers who are interested in the program, the SFPUC also offers on-site consultations. This program allows the SFPUC to engage with customers while also promoting efficiency.

Walking the Talk: Education in the Field

College Hill Learning Garden

The College Hill Learning Garden is an education and demonstration garden that contains a range of features designed to teach local students about how they can help cities transition to ecologically friendly water, food, energy, and waste systems. The Learning Garden features numerous sustainable practices such rain gardens, native plants, water hand pumps, a green roof, and a composting toilet. Located in the Bernal Heights neighborhood, the Learning Garden was built by the SFPUC and is operated in partnership with Education Outside, a local nonprofit. Workshops and free field trips are available at the learning garden and are provided to any San Francisco school. The site-specific Urban Stewards Program curriculum covers eight ecoliteracy topics ranging from Zero-Waste Cycles to Garden Planting. The College Hill Learning Garden is one more way the SFPUC is doing its part to foster the next generation of environmental stewards.

College Hill Learning Garden

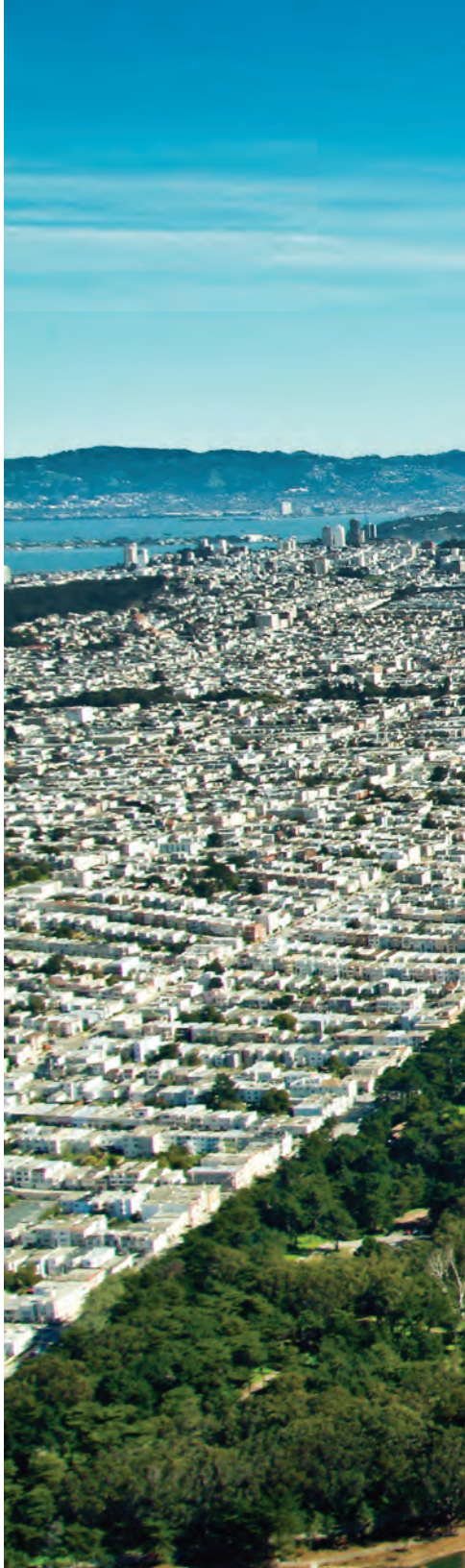
Strengthening OneWaterSF

We are proud of the shift we've made through OneWaterSF. Moving forward, we are committed to strengthening our work by focusing on key, strategic areas. This enables us to emphasize aspects that are critical to our continued OneWaterSF journey. To this end, the 2018 OneWaterSF Initiatives are designed to not only build upon other successful projects and programs, but to strengthen the shift we've made in our approach to resource management. For 2018, we have identified nine OneWaterSF Initiatives that focus on three key areas:

- **Expand the OneWaterSF vision to all parts of our organization, and externally to other City departments and the community.** Ongoing advancement of OneWaterSF within the SFPUC and to other City departments will ensure that we continue our City's focus of balancing the needs of the communities we serve with the ecosystem. Community engagement through OneWaterSF allows us to foster awareness around resource management and expand participation in programs and projects that demonstrate the OneWaterSF Vision.

- **Promote the use of new technologies and adjustments to business practices that will continue positioning the SFPUC as a utility of the future**. Innovation and creativity put us in a position to better adapt to changing conditions. Having the flexibility to quickly adapt will allow us to meet future resource challenges and to create a more resilient and reliable future, which is a foundational element of the OneWaterSF Vision.

- **Implement projects that match the right resources to the right use.** Matching the right resources to the right use is one of the cornerstones of OneWaterSF. This approach helps us maximize the efficient use of our resources and better recognize the potential of all resources within our water and energy systems. We continue to focus on this aspect of our work as we advance the OneWaterSF Vision.



Golden Gate Park, San Francisco

2018 Initiatives: Expanding the OneWaterSF Vision

Please Touch Community Garden, Civic Center Neighborhood

OneWaterSF Educator/School Education Program

Starting in 2002, the SFPUC has been engaging with San Francisco students to educate them on the critical role they play in the resource cycle. Partnering with the San Francisco Department of the Environment and San Francisco Unified School District, this interagency collaboration has developed curriculum for students in Grades K-6 centered on resource conservation and watershed stewardship, administered field trips to water treatment plants and community gardens, and created teaching materials and learning sessions for teachers. To complement these efforts, this Initiative will support the development of curriculum to reach grades 8-12 that will highlight the shift in how we manage our resources and explore the OneWaterSF Vision and Guiding Principles. These lessons will be designed to foster exploration and development of career pathways in engineering and environmental design. This OneWaterSF Initiative will demonstrate how the City is dedicated to reinvesting in the future workforce and helping students connect to meaningful careers.

Moccasin Yard, Tuolumne County

OneWaterSF in the Field

As we continue implementation of OneWaterSF, we want to ensure that the OneWaterSF Vision and Guiding Principles reach all our employees, located in San Francisco and beyond. The primary goal of this Initiative is to raise awareness of OneWaterSF concepts throughout the SFPUC and help staff identify how their work is contributing to the success of OneWaterSF. OneWaterSF in the Field will deliver the Vision and framework of the program to SFPUC staff through a series of roadshows and listening campaigns. Representatives from the OneWaterSF team will gather feedback about current projects underway that align with the OneWaterSF Guiding Principles and identify champions across all Enterprises and Bureaus who can serve as advocates of OneWaterSF. This Initiative will ensure the continued growth of OneWaterSF while showcasing project successes for the agency.

OneWaterSF Learning Lab: Zoo Exhibit

The Oceanside Treatment Plant, located on the westside of the City, operates beneath and adjacent to the San Francisco Zoo. This geography presents a unique opportunity for the SPFUC to share resource recovery opportunities and contribute toward meeting the City's climate change goals. This OneWaterSF Initiative would create a public exhibit for visitors centered around resource use and recovery, while simultaneously lowering operational costs for the Zoo. Green waste and animal manure produced at the Zoo would be treated and converted into a biosolids-based compost that could be used to grow animal feed on an on-site farm. The farm would use recycled water produced at the Oceanside Plant to irrigate the crops, and recovered heat from the wastewater treatment process would be used to warm a small plant nursery. In addition to promoting OneWaterSF principles, the project would help contribute to the success of San Francisco's 0-50-100 ROOTS climate change goals.

Giraffe habitat at San Francisco Zoo

2018 Initiatives: Promoting the Use of Technology & Changing Business Practices

Landscape Irrigation Smart Technology

Partnering for Innovation

A key element of the OneWaterSF approach is to foster innovation and implement technological solutions that can help us be a utility of the future. However, as a public entity with finite research and development capacity, we are limited in our ability to investigate the latest technologies. This constraint makes establishing internal and external partnerships all the more critical so we can effectively leverage our resources and prioritize research efforts to identify potential technologies that can address a broad range of needs at the SFPUC. This Initiative encourages establishing internal and external partnerships that will allow the SFPUC to streamline the process of identifying and testing new technology solutions. Strengthening internal partnerships will also help create a platform for SFPUC staff to share efforts and access potential solutions and technologies. Work under this initiative will allow us to help advance the OneWaterSF Guiding Principles of pursuing partnerships, fostering creative ideas, and piloting state of the art technologies.

Old Records, San Francisco Public Utilities Commission

New Service Connection Process Improvement Project

In the middle of a construction boom, San Francisco is seeing an unprecedented increase in applications for new water service connections. This increased demand has taxed existing resources and processes, resulting in an undesirable customer experience. In the past two years, the New Service Connection Process Improvement Project has already provided cross-departmental transparency and extensively re-engineered existing business processes. This Initiative will continue this work by beginning to design and implement an Online Customer Portal for application and monitoring of new water service requests. It is envisioned that the Portal will provide advanced and transparent tracking of all steps in the installation process, from application approvals to construction to initiation of account billing. This 2018 Initiative provides an opportunity to implement a technology solution that will enhance the SFPUC's ability to properly execute a cross-functional effort aimed at improving customers' experience.

Blue Green Academy/Center for Stormwater Solutions

This 2018 Initiative aims to create a program that will provide technical assistance trainings for SFPUC partners related to green infrastructure. It is currently envisioned that the trainings would address each phase of green infrastructure project development, from site analysis through construction and maintenance. Open to the city family, development community, and general public, trainings will include technical guidance, a technical assistance team, and talks on specific areas of interest. Outcomes for 2018 include developing and launching a program website, setting the first year's training schedule, and developing the Stormwater Management Ordinance Design training module. This Initiative helps expand the principles of OneWaterSF, including supporting multiple benefits and promoting innovative solutions, to engage our communities about the value of approaching resource management through a OneWaterSF lens.

Willie Brown Middle School, Silver Terrace Neighborhood

2018 Initiatives: Matching the Right Resource to the Right Use

Golf Course

Biosolids Demonstration Garden, Tacoma, Washington

Gleneagles Non-Potable Feasibility Study

Of the nine golf courses located in the City of San Francisco, Gleneagles is the last remaining golf course using potable water for irrigation. Work under this Initiative will assess the feasibility of utilizing adjacent non-potable sources for irrigation of the golf course in and around McLaren Park. Ultimately, the study will be used to determine if the golf course can use 100% non-potable water for non-potable uses. In 2018, the SFPUC will complete a small-scale watershed assessment of the golf course site and its surrounding drainage area to document the potential non-potable supply and demand for the golf course. This Initiative is the first step in the planning process; based on the outcomes of the analysis, future work may include design and construction of a non-potable system to serve Gleneagles Golf Course.

Southeast Plant Biosolids Demonstration Garden

Building upon our work performed under the 2017 biosolids initiative, this 2018 OneWaterSF Initiative will plan and construct a biosolids demonstration garden at the Southeast Treatment Plant (SEP). Biosolids are the nutrient-rich organic material that results from the biological and physical treatment of wastewater. This material provides multiple benefits to soil health, including increased water holding capacity and the return of vital nutrients back to soils. Biosolids also reduce the concentration of CO_2 in the atmosphere by increasing the amount of carbon able to be stored in soil. Once constructed, the Southeast Treatment Plant Biosolids Demonstration Garden will be accessible to SFPUC staff as well as community members to show the tangible benefits of using biosolids as a soil amendment. This OneWaterSF Initiative will serve as a visual representation of the benefits of resource recovery and our ability to help combat climate change.

Westside Downspout Disconnect Pilot

The Westside Downspout Disconnect Pilot builds-on the 2017 Initiative and residential stormwater grant program proposed as part of the Collection System Capital Improvement Strategy. Work under this Initiative will develop a program framework and implementation recommendation for a downspout disconnection program on the westside of the City. This program will engage with homeowners to implement stormwater management practices, such as rain gardens and cisterns, on their property. Outcomes for 2018 include developing a work plan for program implementation and selecting a pilot block/neighborhood to start the program. This Initiative embodies several of OneWaterSF's principles including promoting ecosystem health, adapting to future changes, and providing multiple benefits.

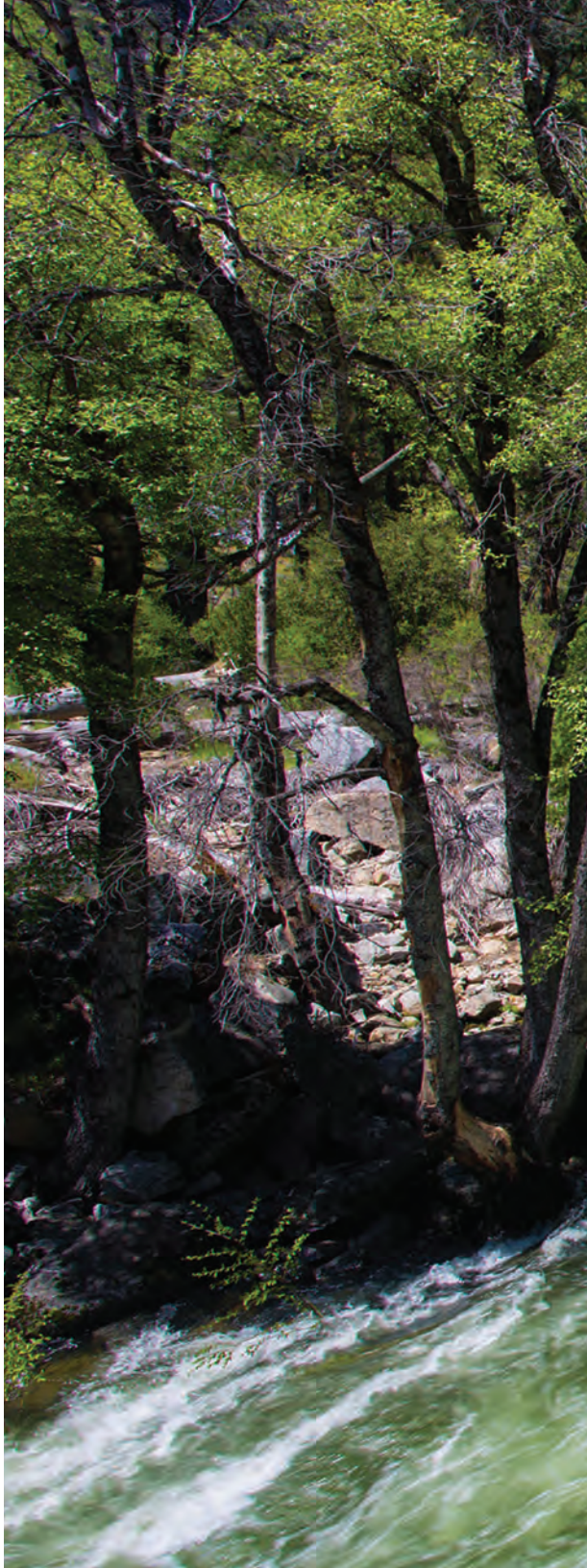
Sunset District, San Francisco

Sustaining OneWaterSF

OneWaterSF has generated a shift in how we do business at the SFPUC. With this shift, we have institutionalized a culture that finds value in working across traditional boundaries to embrace creative ideas and develop projects and programs that converge multiple resources.

As we look to the future, we know that many challenges related to resource management lie ahead. We are continually reminded that drought is an ongoing threat to our water supply, that past assumptions used for resource planning do not always fit today's circumstances, that the regulatory landscape continues to evolve, and that climate uncertainties test our systems.

However, we are also continually inspired by new opportunities for utilizing and managing our finite water and energy resources. Water purification, solar energy and biogas generation, local water supply capture and use, and nutrient recovery all provide opportunities to meet future challenges. These opportunities are only uncovered and implemented through the kind of creative, collaborative thinking that is fostered through OneWaterSF. With OneWaterSF, we have also learned that this thinking can originate from many different places; water managers, academia, private sector, and an engaged community all provide unique perspectives that expand traditional thinking. Ongoing partnerships and collaboration will be critical to our continued progress and future success. Through OneWaterSF, we have created a culture that embraces this collaboration to identify and implement innovative projects and programs that continue moving us toward meeting the OneWaterSF Vision.



Tuolumne River

CleanPowerSF Wind Turbines, Solano County

OneWaterSF

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